"SUGGESTED SCORING SCHEME"

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Signature: BJigat Index number.....

545/1
CHEMISTRY
PAPER 1
2024
2 Hours

JINJA JOINT EXAMINATIONS BOARD

*Uganda Certificate of Lower Secondary Education*

**MOCK EXAMINATIONS – JULY / AUGUST 2024**

CHEMISTRY

2Hours

**INTRUSTIONS TO CANDIDATES:**

*This paper consists of* **two** *sections*; **A** and **B**. *It has* **six** *examination items.*
*Section* **A** *has* **two compulsory** *items.*
*Section* **B** *has* **two Parts: - I** *and* **II**. *Answer* **one** *item from* **each** *part.*
*Answer four items in all.*
*Answers to section* **A must** *be written in the spaces provided while those of section* **B must** *be written on the answer booklet(s) provided.*
*Any additional items answered will* **not** *be scored.*

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"SUGGESTED SCORING SCHEME"

JIGA BRIAN JACKSON (0779058429)



## SECTION A

*Answer* **all** *items from this section.*

**Item 1**

Ms. Balanda has a restaurant in Iganga Town. The customers have these days abandoned her restaurant because of poor taste of food, unpleasant scent and food gets spoilt after a very short time. The appearance of cooked food is also not attractive and the soup is always too dilute. She wishes to acquire different substances which would be added to her food to produce meals attractive to her customers. She has contracted you as a chemistry student well knowing that you can advise her on the right products /substance to buy.

(Support material)

Task.

Write a piece of advice to her on: -

a) Category of the substance/product

Score 02 Category with atleast one example.

Food additives (C) divided into two natural and synthetic additives. Examples of food additives include;

flavours (E1), preservatives (E2), food colours (E3), stabilisers (E4).

Category – C , Examples – $E_1$, $E_2$, $E_3$ ...

b) Uses of the different substance/product

Score 02 for any two functions given. F- function.

- Flavours enhance the aroma and taste of food ($F_1$)
- Preservatives increase the shelf-life of foods by inhibiting the growth of moulds, bacteria and other micro-organisms in food. ($F_2$)
- Food colours enhance or improve the general appearance of food thus making it attractive, meeting the consumers expectations. ($F_3$)

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Scoring scheme;

- Effect or explanation or mitigation = score 01
- Non-given = No score.
- ONE effect given, explained and mitigated = score 03
- Effect + Explaination = score 02
- Effect + Mitigation = score 02
- Explaination + Mitigation = score 02

c) Side effects of using the different products/substances on customers and mitigation.

Effect e, Explan E, Mitigate M

- Some food additives result to nervous disorders like irritability therefore affecting the normal body functioning. (e, E)

This can be mitigated by use of recommended amounts of the additives or limited on the use of food additives. (M)

- Some people are allergic to some food additive causing skin irritations and other digestive disorders like diarrhoea, Mitigated through use of recommended amounts. (e, E, M)

d) Evaluation of the substance/product.

Similarity + difference score 02

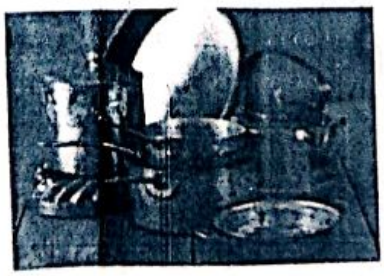
- Natural food additives have less side effects compared to synthetic additives. (D)
- Both natural and synthetic food addives improve the taste of food, improve its texture, preserve. (S)

D- Difference; S- Similarity. Score one in each case

**Item 2**

Mayuge District local Government has planned to create Jobs for Jobless youth by setting up an industry that makes Kitchen Utensils. However, they do not know the various materials and their properties that can be used to make the items. The district has contacted the chemistry department of your school to advise them on what elements /substances to be used as raw materials.

Support materials



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• Score scheme

(i) C·R·E ✓✓✓
(ii) C·R ✓✓
(iii) C·E ✓✓ or R·E ✓✓ 4
(iv) C or R or E ✓
(v) Non given No score.

Task:

As a chemistry student who has learnt about periodic table, write a presentation you would give upon invitation being selected by the head of department.

a) On the category of elements /substances

C·R·E
Category-C
Reason-R
Example-E

Elements are divided into two categories; Metals and Non-metals. C1 C2
Metals form ions by loosing their outermost valency electrons R1
For example Aluminium, iron. E1 E1
Non-metals form ions by gaining electron(s) one their outer most energy level. R2
for example carbon, phosphorus. E2

b) Suitability of the element/substances.

Property-P

(NOTE: Your responces should be in line with elements/substances used to make Kitchen utensils.)

Eg. Aluminium
- Has a good thermo and electrical conductivity P1
- It is durable P2
- Aluminium has a lower density, therefore light P3
- Resistant to corrosion P4 → reject rusting

c) Choice of the element/substance

Use with
Reason.
U-use
R-Reason

- Aluminium is used to manufacture source pans U since it has a good thermo and electrical conductivity R or resistant to corrosion, light.

Succeeded

d) Impact of the elements/substance on the environment and mitigation.

Impact (I)
Mitigation (M)
Score 02

Aluminium affects (or lowers) soil fertility if poorly disposed, I since it is non-biodegrable, doesn't decompose, soil pollution. This can be mitigated through re-cycling of aluminium utensils. M.

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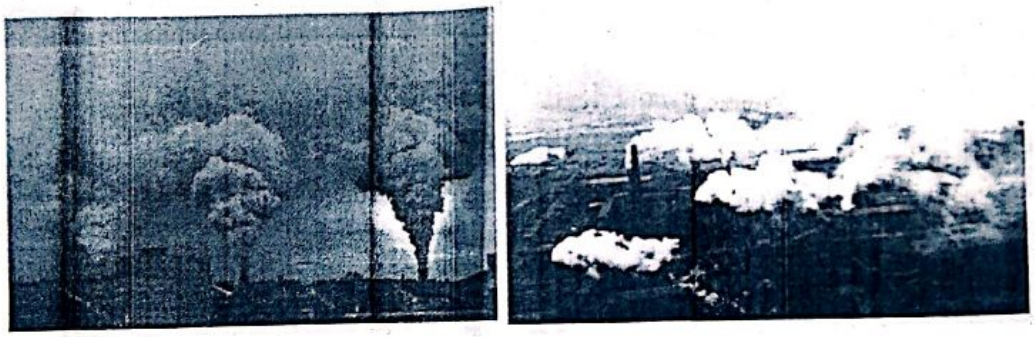
## SECTION B
### Part I
Answer one item from this part.

**Item 3**

In some districts of Uganda like Tororo district, farmers get very low crop yields due to poor soils that has led to persistent famine in the area.
Ammonium nitrate is one of the effective fertilizers used to improve crop yields. The ministry of agriculture and animal husbandry has entrusted an investor to put up an ammonium nitrate production plant in Tororo district such that the fertilizer is got at cheap cost. However, the community near the site is worried about its effects on the environment and how the environmental process will occur.

(Support Material).



The head of department has appointed you to sensitize the community.

Task:
Prepare a presentation you will make during the meeting.

**Item 4**

Bugiri sugar factory which has just been setup is disposing off molasses which would be used to make ethanol. Ethanol is at a high demand and it's used to make essential substances like sanitizer. The locals around are making ethanol on small scale and it can not meet the demands. However, the government is planning to set up an industry to produce ethanol with minimum environmental impact.



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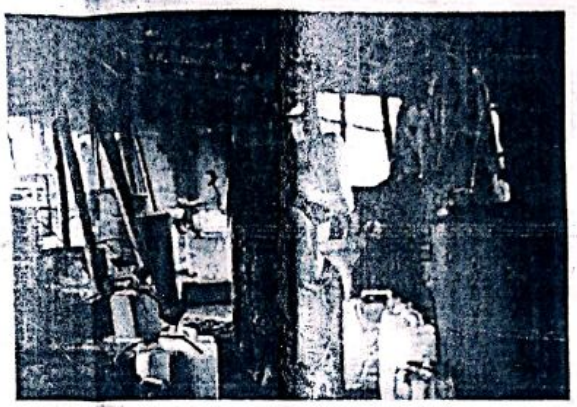
(Support material)



However, the community would like to know the process of production and how it would be carried out.

Task:
As a chemistry student, make a write up you will present to the community members.

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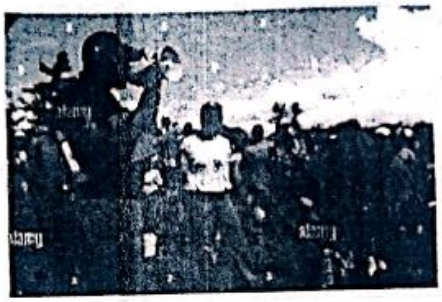
## Part II

(Attempt one question)

**Item 5**

The setup of crude oil mine in Hoima district resulted in displacing of residents to other places but the displaced people are still not contented. This has made the government to intervene.

(Support material)



The government is planning to sensitize the residents through workshops in the district.

Task:

As a chemistry student prepare a short presentation you will deliver during the workshop upon invitation.

**Item 6**

In Masese Division Jinja city some residents near the lake are involved in certain activities like raring animals, growing crops, distillation of ethanol and washing clothes from lake banks. Recently it has been discovered that the fish has started dying and people who use the water for bathing develop rashes. This has attracted the attention of officials of the ministry of health and have been invited for discussion to try and discover the causes of what is happening.

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